

Appendix table 4-35

## Federal obligations for research, by detailed S&amp;E field: Selected years, FY 1989–2009

Field of science and engineering	1989	1994	1999	2004	2005	2006	2007	2008	2009	Average annual growth rates in major fields		
										1989–2009	1999–2009	2004–09
										Percent		
	Current \$millions											
Total, all fields	20,765.5	27,411.2	33,527.5	53,357.8	53,738.2	53,535.7	54,093.6	53,893.7	63,708.8	5.8	6.6	3.6
Environmental sciences	1,773.2	2,838.2	3,095.3	3,741.6	3,502.6	3,430.6	3,170.5	2,984.6	3,751.4	3.8	1.9	0.1
Atmospheric sciences	588.0	1,095.0	1,176.5	1,259.7	1,185.1	1,166.9	964.6	884.5	1,018.2	–	–	–
Geological sciences	542.8	838.0	660.2	704.5	673.5	653.9	638.0	517.5	754.2	–	–	–
Oceanography	491.9	496.8	656.6	809.1	771.5	745.8	787.8	788.7	834.2	–	–	–
Environmental sciences, nec	150.5	408.5	602.0	968.4	872.5	864.0	780.1	793.9	1,144.8	–	–	–
Life sciences	8,495.1	11,284.3	15,422.5	27,728.5	28,127.8	27,927.7	29,463.6	28,918.8	33,267.7	7.1	8.0	3.7
Biological and agricultural	5,020.0	6,103.0	8,047.7	14,848.7	15,144.8	15,485.6	16,326.3	na	na	–	–	–
Agricultural	669.0	727.2	849.4	1,086.8	1,094.2	1,108.2	1,139.4	1,020.3	1,120.4	–	–	–
Biological (excluding environmental)	3,983.2	4,745.8	6,477.6	13,091.9	13,351.6	13,690.8	14,429.7	14,443.1	17,377.0	–	–	–
Environmental biology	367.8	629.9	720.6	670.0	699.0	686.6	757.2	858.0	963.7	–	–	–
Medical sciences	3,222.5	4,862.1	6,801.2	10,898.8	10,862.1	10,592.2	10,790.7	10,387.3	11,392.7	–	–	–
Clinical medical	na	na	na	na	na	na	na	na	na	–	–	–
Other medical	na	na	na	na	na	na	na	na	na	–	–	–
Life sciences, nec	252.6	319.3	573.6	1,981.0	2,120.9	1,849.9	2,346.5	2,210.1	2,414.0	–	–	–
Mathematics and computer sciences	735.4	1,301.6	1,980.6	2,949.4	2,983.4	2,814.9	2,945.7	3,047.3	3,612.5	8.3	6.2	4.1
Computer sciences	364.6	830.2	1,516.1	2,144.9	2,157.1	1,987.8	2,077.7	2,053.0	2,422.5	–	–	–
Mathematics	236.1	342.3	345.3	617.8	686.6	669.2	708.6	782.9	928.1	–	–	–
Mathematics and computer sciences, nec	134.8	129.1	119.2	186.7	139.7	157.9	159.4	211.4	261.8	–	–	–
Physical sciences	3,705.2	4,253.5	4,066.2	5,211.1	5,493.7	5,351.1	5,136.1	5,072.6	5,823.4	2.3	3.7	2.2
Astronomy	541.9	747.6	757.9	920.8	884.9	792.5	655.9	527.9	671.6	–	–	–
Chemistry	782.6	874.4	814.9	1,191.0	1,197.5	1,126.4	1,149.9	1,148.4	1,274.4	–	–	–
Physics	2,190.8	2,443.1	2,221.9	2,598.6	3,041.3	3,001.8	2,939.2	2,968.9	3,357.8	–	–	–
Physical sciences, nec	189.9	188.3	271.4	500.8	370.0	430.5	391.1	427.4	519.6	–	–	–
Psychology	421.7	548.4	632.6	1,854.9	1,891.8	1,747.3	1,837.9	1,740.8	2,086.7	8.3	12.7	2.4
Biological aspects	121.8	48.1	18.0	6.0	2.3	3.0	3.8	21.8	2.2	–	–	–
Social aspects	149.9	116.8	66.6	51.7	46.6	40.9	36.8	18.8	50.9	–	–	–
Psychological sciences, nec	149.9	383.4	547.9	1,797.2	1,842.8	1,703.4	1,797.3	1,700.3	2,033.7	–	–	–
Social sciences	551.0	647.4	854.9	1,089.6	1,097.1	1,123.9	1,147.1	977.0	1,159.3	3.8	3.1	1.2
Anthropology	13.9	16.2	18.3	15.0	18.0	15.1	16.1	17.4	29.4	–	–	–
Economics	166.8	193.3	216.6	204.6	215.9	202.6	250.0	212.3	232.6	–	–	–
Political science	13.5	25.4	20.2	18.7	32.7	44.6	41.2	29.2	24.6	–	–	–
Sociology	94.1	68.1	83.8	120.1	70.2	144.2	217.6	95.2	138.8	–	–	–
Social sciences, nec	262.8	344.4	516.0	731.2	760.4	717.4	622.2	622.9	733.9	–	–	–
History	na	na	na	na	na	na	na	na	na	–	–	–
Linguistics	na	na	na	na	na	na	na	na	na	–	–	–
Other social sciences	na	na	na	na	na	na	na	na	na	–	–	–
Other sciences, nec	641.6	1,058.4	1,212.1	1,916.3	2,088.9	2,461.3	1,403.1	2,177.1	3,713.4	9.2	11.8	14.1
Engineering	4,442.2	5,479.4	6,263.4	8,866.4	8,552.9	8,678.7	8,989.7	8,975.5	10,294.4	4.3	5.1	3.0
Aeronautical	986.8	1,222.7	1,609.7	1,640.8	1,276.3	1,229.2	929.2	810.3	910.7	–	–	–

Appendix table 4-35

## Federal obligations for research, by detailed S&amp;E field: Selected years, FY 1989–2009

Field of science and engineering	1989	1994	1999	2004	2005	2006	2007	2008	2009	Average annual growth rates in major fields			
										1989–2009	1999–2009	2004–09	
Astronautical	677.4	499.1	620.6	664.9	494.1	476.3	341.0	288.1	371.1	–	–	–	
Chemical	142.2	238.2	203.2	318.8	283.8	294.6	353.8	345.6	447.1	–	–	–	
Civil	229.8	277.9	328.5	330.3	279.2	352.7	461.5	488.0	678.9	–	–	–	
Electrical	843.1	741.8	698.7	890.9	1,033.5	1,035.5	1,027.5	1,046.5	1,255.1	–	–	–	
Mechanical	257.4	378.1	240.4	301.9	323.7	298.2	337.2	292.4	314.5	–	–	–	
Metallurgy and materials	521.0	851.4	788.0	1,037.2	1,184.1	1,250.0	1,479.8	1,623.9	1,723.4	–	–	–	
Engineering, nec	784.5	1,270.2	1,774.3	3,681.6	3,678.3	3,742.3	4,059.8	4,080.8	4,593.5	–	–	–	
	Constant FY 2005 \$millions												
Total, all fields	29,861.2	34,204.1	38,462.2	55,098.9	53,738.2	51,765.3	50,773.0	49,452.8	57,691.6	3.3	4.1	0.9	
Environmental sciences	2,549.9	3,541.6	3,550.9	3,863.7	3,502.6	3,317.2	2,975.9	2,738.7	3,397.1	1.4	-0.4	-2.5	
Atmospheric sciences	845.6	1,366.4	1,349.7	1,300.8	1,185.1	1,128.3	905.4	811.6	922.0	–	–	–	
Geological sciences	780.6	1,045.7	757.4	727.5	673.5	632.3	598.8	474.9	683.0	–	–	–	
Oceanography	707.4	619.9	753.2	835.5	771.5	721.1	739.4	723.7	755.4	–	–	–	
Environmental sciences, nec	216.4	509.7	690.6	1,000.0	872.5	835.4	732.2	728.5	1,036.7	–	–	–	
Life sciences	12,216.1	14,080.7	17,692.4	28,633.3	28,127.8	27,004.2	27,655.0	26,535.9	30,125.6	4.6	5.5	1.0	
Biological and agricultural	7,218.9	7,615.4	9,232.2	15,333.2	15,144.8	14,973.5	15,324.1	na	na	–	–	–	
Agricultural	962.0	907.4	974.4	1,122.3	1,094.2	1,071.6	1,069.5	936.2	1,014.6	–	–	–	
Biological (excluding environmental)	5,727.9	5,921.9	7,431.0	13,519.1	13,351.6	13,238.1	13,543.9	13,253.0	15,735.8	–	–	–	
Environmental biology	528.9	786.0	826.7	691.9	699.0	663.9	710.7	787.3	872.7	–	–	–	
Medical sciences	4,634.0	6,067.0	7,802.2	11,254.4	10,862.1	10,241.9	10,128.3	9,531.4	NA	–	–	–	
Clinical medical	na	na	na	na	na	na	na	na	na	–	–	–	
Other medical	na	na	na	na	na	na	na	na	na	–	–	–	
Life sciences, nec	363.2	398.4	658.0	2,045.6	2,120.9	1,788.7	2,202.5	2,028.0	2,186.0	–	–	–	
Mathematics and computer sciences	1,057.5	1,624.2	2,272.1	3,045.6	2,983.4	2,721.8	2,764.9	2,796.2	3,271.3	5.8	3.7	1.4	
Computer sciences	524.3	1,035.9	1,739.2	2,214.9	2,157.1	1,922.1	1,950.2	1,883.8	2,193.7	–	–	–	
Mathematics	339.5	427.1	396.1	638.0	686.6	647.1	665.1	718.4	840.4	–	–	–	
Mathematics and computer sciences, nec	193.8	161.1	136.7	192.8	139.7	152.7	149.6	194.0	237.1	–	–	–	
Physical sciences	5,328.2	5,307.6	4,664.7	5,381.1	5,493.7	5,174.1	4,820.8	4,654.6	5,273.4	-0.1	1.2	-0.4	
Astronomy	779.3	932.9	869.5	950.8	884.9	766.3	615.6	484.4	608.2	–	–	–	
Chemistry	1,125.4	1,091.1	934.8	1,229.9	1,197.5	1,089.2	1,079.3	1,053.8	1,154.0	–	–	–	
Physics	3,150.4	3,048.5	2,548.9	2,683.4	3,041.3	2,902.5	2,758.8	2,724.3	3,040.7	–	–	–	
Physical sciences, nec	273.1	235.0	311.3	517.1	370.0	416.3	367.1	392.2	470.5	–	–	–	
Psychology	606.4	684.3	725.7	1,915.4	1,891.8	1,689.5	1,725.1	1,597.4	1,889.6	5.8	10.0	-0.3	
Biological aspects	175.2	60.0	20.6	6.2	2.3	2.9	3.6	20.0	2.0	–	–	–	
Social aspects	215.6	145.7	76.4	53.4	46.6	39.5	34.5	17.3	46.1	–	–	–	
Psychological sciences, nec	215.6	478.4	628.5	1,855.8	1,842.8	1,647.1	1,687.0	1,560.2	1,841.6	–	–	–	
Social sciences	792.3	807.8	980.7	1,125.2	1,097.1	1,086.7	1,076.7	896.5	1,049.8	1.4	0.7	-1.4	
Anthropology	20.0	20.2	21.0	15.5	18.0	14.6	15.1	16.0	26.6	–	–	–	
Economics	239.9	241.2	248.5	211.3	215.9	195.9	234.7	194.8	210.6	–	–	–	
Political science	19.4	31.7	23.2	19.3	32.7	43.1	38.7	26.8	22.3	–	–	–	
Sociology	135.3	85.0	96.1	124.0	70.2	139.4	204.2	87.4	125.7	–	–	–	

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## Federal obligations for research, by detailed S&amp;E field: Selected years, FY 1989–2009

Field of science and engineering	1989	1994	1999	2004	2005	2006	2007	2008	2009	Average annual growth rates in major fields		
										1989–2009	1999–2009	2004–09
Social sciences, nec	377.9	429.7	591.9	755.1	760.4	693.7	584.0	571.6	664.6	–	–	–
History	na	–	–	–								
Linguistics	na	–	–	–								
Other social sciences	na	–	–	–								
Other sciences, nec	922.6	1,320.7	1,390.5	1,978.8	2,088.9	2,379.9	1,317.0	1,997.7	3,362.7	6.7	9.2	11.2
Engineering	6,388.0	6,837.3	7,185.3	9,155.7	8,552.9	8,391.7	8,437.9	8,235.9	9,322.1	1.9	2.6	0.4
Aeronautical	1,419.0	1,525.7	1,846.6	1,694.3	1,276.3	1,188.6	872.2	743.5	824.7	–	–	–
Astronautical	974.1	622.8	711.9	686.6	494.1	460.5	320.1	264.4	336.0	–	–	–
Chemical	204.5	297.2	233.1	329.2	283.8	284.9	332.1	317.1	404.9	–	–	–
Civil	330.5	346.8	376.8	341.1	279.2	341.0	433.2	447.8	614.8	–	–	–
Electrical	1,212.4	925.6	801.5	920.0	1,033.5	1,001.3	964.4	960.3	1,136.6	–	–	–
Mechanical	370.1	471.8	275.8	311.8	323.7	288.3	316.5	268.3	284.8	–	–	–
Metallurgy and materials	749.2	1,062.4	904.0	1,071.0	1,184.1	1,208.7	1,389.0	1,490.1	1,560.6	–	–	–
Engineering, nec	1,128.1	1,585.0	2,035.4	3,801.7	3,678.3	3,618.5	3,810.6	3,744.5	4,159.6	–	–	–

NA = not available, data collected for this table were not recorded at that level in that particular fiscal year; na = not applicable, data collected for this table were not recorded at that level in that particular fiscal year, or agency or subagency did not exist as such or in that organization in that year; nec = not elsewhere classified

NOTES: During the Volume 45 (FY 1995–97) survey cycle, National Aeronautics and Space Administration (NASA) made a statistical adjustment to the 1994 and 1995 field of science and engineering values to diminish a computational error introduced by its software. In FY 2000, NASA reclassified Space Station as a physical asset, reclassified Space Station Research as equipment, and transferred funding for the program from R&D to R&D plant; and National Institutes of Health reclassified all its development activities as research. Figures for FY 2009 include obligations from the additional federal R&D funding appropriated by the American Recovery and Reinvestment Act.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development: FY 2009–11.

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